

In the Claims

Please cancel claims 8-12, 15, 22, 25 and 28 without prejudice and amend claims 23-24, 26-27, and 29-30 such that the claims read as follows:

Claims 1-12 (canceled)

Claim 13 (previously presented): An apparatus configured to clean a semiconductor substrate, comprising:

a tank configured to contain a liquid, the tank having an opening configured to allow a substrate to enter the tank from a position above the tank;

a fragile component contained in the tank, positioned within the footprint of the opening, and configured to transmit sonic energy; and

a barrier that extends above at least the width the fragile component;

wherein:

the fragile component comprises a quartz plate;

and

the barrier comprises a substrate support, the substrate support comprises an extended roller, and the extended roller comprises a hollow extension.

Claim 14 (original): The apparatus of claim 13 wherein the extended roller comprises quartz.

Claims 15-16 (canceled)

Claim 17 (previously presented): An apparatus configured to clean a semiconductor substrate, comprising:

a tank configured to contain a liquid, the tank having an opening configured to allow a substrate to enter the tank from a position above the tank;

a fragile component contained in the tank, positioned within the footprint of the opening, and configured to transmit sonic energy; and

a barrier that extends above at least the width the fragile component;

wherein the barrier is configured so as to be transparent to the sonic energy transmitted by the fragile component.

Claim 18-19 (canceled)

Claim 20 (previously presented): An apparatus configured to clean a semiconductor substrate, comprising:

a tank configured to contain a liquid, the tank having an opening configured to allow a substrate to enter the tank from a position above the tank;

a fragile component contained in the tank, positioned within the footprint of the opening, and configured to transmit sonic energy; and

a barrier extending above at least the width the fragile component;

wherein the barrier has a thickness that is a multiple of one half of the wavelength of the sonic energy transmitted by the fragile component as the sonic energy travels through the barrier material.

Claims 21-22 (canceled)

Claim 23 (currently amended): An The apparatus of claim 22 configured to clean a semiconductor substrate, comprising:

a tank configured to contain a liquid, the tank having an opening configured to allow a substrate to enter the tank from a position above the tank;

a fragile component contained in the tank, positioned within the footprint of the opening and configured to transmit sonic energy; and

a barrier that extends above at least the width of the fragile component and is positioned so as to protect a central region of the length of the fragile component;

wherein the barrier comprises at least three substrate support rollers, and is configured so as to be transparent to the sonic energy transmitted by the fragile component.

Claim 24 (currently amended): An ~~The~~ apparatus of claim 22 configured to clean a semiconductor substrate, comprising:

a tank configured to contain a liquid, the tank having an opening configured to allow a substrate to enter the tank from a position above the tank;

a fragile component contained in the tank, positioned within the footprint of the opening and configured to transmit sonic energy; and

a barrier that extends above at least the width of the fragile component and is positioned so as to protect a central region of the length of the fragile component;

wherein the barrier comprises at least three substrate support rollers, and has a thickness that is a multiple of one half of the wavelength of the sonic energy transmitted by the fragile component as the sonic energy travels through the barrier material.

Claim 25 (canceled)

Claim 26 (currently amended): An The apparatus of ~~claim 25~~  
configured to clean a semiconductor substrate, comprising:

a tank configured to contain a liquid, the tank having  
an opening configured to allow a substrate to enter the  
tank from a position above the tank;

a fragile component contained in the tank, positioned  
within the footprint of the opening and configured to  
transmit sonic energy; and

a barrier that extends above at least the width of the  
fragile component and is positioned so as to protect a  
central region of the length of the fragile component;

wherein the barrier comprises a substrate support, the  
substrate support comprises an extended roller, the  
extended roller is a bottom roller positioned so as to  
contact a bottom region of a substrate supported thereby,  
and the barrier is configured so as to be transparent to  
the sonic energy transmitted by the fragile component.

Claim 27 (currently amended): An The apparatus of ~~claim 25~~  
configured to clean a semiconductor substrate, comprising:

a tank configured to contain a liquid, the tank having  
an opening configured to allow a substrate to enter the  
tank from a position above the tank;

a fragile component contained in the tank, positioned  
within the footprint of the opening and configured to  
transmit sonic energy; and

a barrier that extends above at least the width of the  
fragile component and is positioned so as to protect a  
central region of the length of the fragile component;

wherein the barrier comprises a substrate support, the  
substrate support comprises an extended roller, the  
extended roller is a bottom roller positioned so as to

contact a bottom region of a substrate supported thereby,  
and the barrier has a thickness that is a multiple of one  
half of the wavelength of the sonic energy transmitted by  
the fragile component as the sonic energy travels through  
the barrier material.

Claim 28 (canceled)

Claim 29 (currently amended): ~~An~~ The apparatus of claim 28  
configured to clean a semiconductor substrate, comprising:

a tank configured to contain a liquid, the tank having  
an opening configured to allow a substrate to enter the  
tank from a position above the tank;

a fragile component contained in the tank, positioned  
within the footprint of the opening, and configured to  
transmit sonic energy; and

a barrier that extends above at least the width of the  
fragile component;

wherein the barrier comprises a substrate support, the  
substrate support comprises an extended roller, the  
extended roller is a bottom roller positioned so as to  
contact a bottom region of a substrate supported thereby,  
and the barrier is configured so as to be transparent to  
the sonic energy transmitted by the fragile component.

Claim 30 (currently amended): ~~An~~ The apparatus of claim 28  
configured to clean a semiconductor substrate, comprising:

a tank configured to contain a liquid, the tank having  
an opening configured to allow a substrate to enter the  
tank from a position above the tank;

a fragile component contained in the tank, positioned within the footprint of the opening, and configured to transmit sonic energy; and

a barrier that extends above at least the width of the fragile component;

wherein the barrier comprises a substrate support, the substrate support comprises an extended roller, the extended roller is a bottom roller positioned so as to contact a bottom region of a substrate supported thereby, and the barrier has a thickness that is a multiple of one half of the wavelength of the sonic energy transmitted by the fragile component as the sonic energy travels through the barrier material.